

Application No.: 10/523,972

REMARKS

I. Introduction

In response to the January 8, 2008 Office Action, Applicants have amended claim 1 in order to further clarify the scope of the present invention. In addition, new claims 16-20 have been added. Support for new claim 16 may be found, for example, on page 13, lines 2-11 of the specification. Support for new claim 17 may be found, for example, on page 19, lines 3-7 and Fig. 3 of the specification. Support for new claim 18 may be found, for example, on page 10, lines 4-5 and Fig. 1 of the specification. Support for new claim 19 may be found, for example, on page 20, lines 6-7 and Fig. 4 of the specification. Support for new claim 20 may be found, for example, in Fig. 2 of the drawings. No new matter has been added.

Applicants appreciate the granting of an interview with the Examiner on April 1, 2008, during which the pending rejections of claim 1 were discussed.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection of Claims 1, 5-6 And 8-12 Under 35 U.S.C. § 103

Claims 1, 5-6 and 8-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hashiguchi et al. (JP Pub. No. 62-234878) in view of McMahan et al. (USP No. 6,002,240) and further in view of Thomas et al. (US 2002/0079865). In addition, claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hashiguchi in view of McMahan and Thomas and further in view of Oshida et al. (USP No. 5,585,204). Applicants respectfully traverse the pending rejections for at least the following reasons.

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With regard to the present invention, amended claim 1 recites a battery storing device comprising an independent discharge circuit that is electrically connected to the battery and can perform discharge independently from the charge/discharge operation of a main circuit, wherein said independent discharge circuit is for suppressing the decrease in the ambient temperature of the battery.

Thus, one feature of the present disclosure is that the independent discharge circuit is employed to suppress the decrease in the ambient temperature of the battery. As is discussed on page 13 of the specification, when the temperature of the battery decreases, the output of the battery decreases and the traveling performance of the electric automobile decreases. The independent discharge circuit is utilized to prevent this temperature decrease of the battery from occurring.

It is admitted in the Office Action that Hashiguchi fails to disclose that the independent discharge circuit can perform discharge independently from the charge/discharge operation of a main circuit. McMahan is relied upon to remedy this deficiency. However, in contrast to claim 1, the object of McMahan is to protect the controller 110 from decrease in temperature, not to prevent a decrease in the temperature of the battery. In order to protect the controller from becoming colder, heater circuit 150 and controller 110 are installed in a thermally conductive medium 125 (see, Fig. 1 and col. 5, lines 36-41 of McMahan). However, as shown in Fig. 1, the battery 130 is disposed outside of the thermally conductive medium 125. As such, McMahan fails to teach or suggest an independent discharge circuit for suppressing the decrease in the ambient temperature of the battery. Moreover, Thomas is not relied upon to remedy this deficiency. Accordingly, the combination of Hashiguchi, McMahan and Thomas fails to disclose each element of claim 1.

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In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. As Hashiguchi, McMahan and Thomas, at a minimum, fail to disclose or suggest a battery storing device comprising an independent discharge circuit that is electrically connected to the battery and can perform discharge independently from the charge/discharge operation of a main circuit, wherein said independent discharge circuit is for suppressing the decrease in the ambient temperature of the battery, it is clear that Hashiguchi, McMahan and Thomas, alone or in combination, fail to render amended claim 1 obvious. As such, Applicants respectfully request that the § 103 rejection of amended claim 1, and all pending dependent claims thereon, be withdrawn.

Turning to claim 14, claim 14 recites a battery storing device according to claim 1, further comprising a plurality of heat conducting fins; and a heat conducting body located at said opening for conducting heat between said plurality of fins, wherein said heat conducting fins communicate with said heat conducting body.

It is alleged in the Office Action, that Oshida discloses a plurality of heat conducting fins 152, a heat conducting body 154 located at the opening for conducting heat between said plurality of fins, wherein said heat conducting fins communicate with said heat conducting body (see, Fig. 22 of Oshida).

However, as can be seen in Fig. 22 and in col. 10, lines 23-28 of Oshida, the heat conducting plate 154 having heat radiating fins 152 is attached directly to the battery 150. As such, the Oshida does not disclose a heat conducting plate located at the opening for conducting heat between said plurality of fins. In contrast to Oshida, the fins 23 of the present disclosure are not directly attached to the battery 1, but rather are located at the opening for conducting heat 6

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(see, Fig. 2). Furthermore, Hashiguchi, McMahan and Thomas are not relied upon to remedy this deficiency. Moreover, new claim 20 adds the limitation wherein the heat conducting body does not directly contact the battery. Thus, even if the battery of Hashiguchi was interpreted to be located at the opening, the combination would still fail to disclose that the heat conducting body located at the opening is not in direct contact with the battery.

**III. All Dependent Claims Are Allowable Because The
Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplicatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 1 and 14 patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

In addition, claim 16 contains the limitation that the battery storing device is installed in a vehicle. Claim 17 adds a limitation of a heat conductor which has a first heat conduction body disposed in an opening in a lid body; a second heat conduction body bonded to a heat insulation body; and a third heat conduction body, wherein the second heat conduction body is disposed between the first heat conduction body and the third heat conduction body.

Claim 18 discloses that the heat releasing retention mechanism comprises an opening/closing lid body, wherein magnetic materials are disposed at the ends of the opening/closing lid body, and claim 19 further comprises a claw for temporarily fixing the opening/closing lid body. As none of the cited prior art appears to disclose these limitations, Applicants submit that new claims 16-19 are allowable over the cited prior art. Moreover, as

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new claims 16-19 are dependent upon claim 1, Applicants respectfully submit that claims 16-19 are allowable for at least this reason as well.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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